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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,769	06/27/2003	Scott A. Hareland	42P15685	6439

7590 10/23/2006

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EXAMINER

SUCH, MATTHEW W

ART UNIT PAPER NUMBER

2891

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/607,769	Applicant(s) HARELAND ET AL.	
	Examiner Matthew W. Such	Art Unit 2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 13-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/24/04 - 3/31/06</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Invention I, drawn to claims 1-12, in the reply filed on 28 September 2006 is acknowledged.

### ***Specification***

2. The disclosure is objected to because of the following informalities:
  - a. The word "transitor" in Para. 0019, Line 2 and Para. 0046, 2<sup>nd</sup> to last line should each read "transistor";
  - b. The word "transister" in Para. 0037, Line 2 should read "transistor";
  - c. The word "semicoductor" in Para. 0039, Line 1 should read "semiconductor";
  - d. The word "ion-implantating" in Para. 0047, Line 5 should read "ion-implanting";
  - e. The word "siliide" in Para. 0061, Line 2 should read "silicide".

Appropriate corrections are required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each claim recites the limitation "said at least one other semiconductor

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body" in Lines 4, 7 and 8 of the claim. There is insufficient antecedent basis for this limitation in the claim. The examiner provisionally interprets the limitation to be "said at least one additional semiconductor body".

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 4-8 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Maegawa ('513).

7. Regarding claims 1 and 7, Maegawa teaches a semiconductor body (Element 3) with a top surface opposite a bottom surface and laterally opposite sidewalls formed above an insulating substrate (Elements 1, 2, 5 on substrate surface). A gate dielectric (Element 5 around 3) is formed on around all sides of the semiconductor body, including on a portion of the bottom surface of the semiconductor body not on the insulating substrate. A gate electrode (Element 6) is formed on the gate dielectric around all sides of the semiconductor body. A pair of source/drain regions (Elements S and D) is formed in the semiconductor body on opposite sides of the gate electrode.

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8. Regarding claims 2 and 8, Maegawa further teaches that the semiconductor body is a single crystal silicon film (Col. 1, Lines 24-25; Col. 2, Lines 46-47)
9. Regarding claims 4 and 10, Maegawa further teaches that the gate electrode can be polycrystalline silicon (Element 6, 11, 12; Col. 1, Line 41; Col. 2, Lines 19-20; Col. 6, Line 51).
10. Regarding claim 5 and 11, Maegawa further teaches that the insulating substrate comprises an oxide film (Elements 2 and 5) on a monocrystalline silicon substrate (Element 1).
11. Regarding claims 6 and 12, Maegawa further teaches that the semiconductor device includes at least one additional semiconductor body having a top surface opposite a bottom surface and laterally opposite sidewalls (Figs. 19 and 30). The additional semiconductor body has a gate dielectric formed on all sides and a gate electrode formed on all sides adjacent to the gate dielectric.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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13. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maegawa ('513) in view of Yu (869).

Maegawa teaches the device of claims 1 and 7 wherein the channel material is silicon. Maegawa does not teach other conventional channel materials.

Yu teaches using silicon-germanium as an alternative conventional channel material (Abstract; Col. 3, Lines 1-20) for devices formed on SIO substrates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a silicon-germanium channel material as taught by Yu in the device of Maegawa. Yu teaches that germanium inclusion increases the charge carrier mobility of the channel region, producing a faster device (Abstract; Col. 2, Lines 22-31; Col. 4, Lines 65-67).

### ***Double Patenting***

14. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

15. Claim 12 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 6. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim

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to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

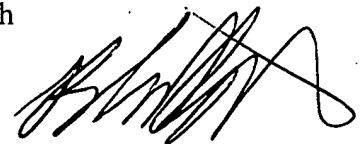
***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew W. Such whose telephone number is 571-272-8895. The examiner can normally be reached on Monday - Friday 8AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley W. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew W. Such  
Examiner  
Art Unit 2891



**B. WILLIAM BAUMEISTER  
SUPERVISORY PATENT EXAMINER**

MWS  
10/15/06